*Table of flood stages in January 1935*

[All dates in January, unless otherwise specified]

| River and station | Flood stage | Above flood stages—dates From— | Above flood stages—dates To— | Crest Stage | Crest Date |
|---|---|---|---|---|---|
| ATLANTIC SLOPE DRAINAGE | | | | | |
| Connecticut: | *Feet* | | | *Feet* | |
| White River Junction, Vt. | 18 | 10 | 10 | 18.1 | 10 |
| Hartford, Conn. | 16 | 11 | 14 | 20.7 | 12 |
| Hudson: Troy, N. Y. | 15 | 10 | 11 | 16.4 | 10 |
| Chenango: Sherburne, N. Y. | 8 | 9 | 11 | 9.7 | 9 |
| Susquehanna: | | | | | |
| Oneonta, N. Y. | 12 | 9 | 12 | 16.7 | 11 |
| Bainbridge, N. Y. | 11 | 9 | 12 | 15.8 | 11 |
| Binghamton, N. Y. | 14 | 9 | 11 | 16.75 | 10 |
| Towanda, Pa. | 16 | 10 | 11 | 16.5 | 10 |
| James: | | | | | |
| Buchanan, Va. | 17 | 22 | 24 | 24.5 | 23 |
| Lynchburg, Va. | 18 | 23 | 24 | 22.0 | 23 |
| Columbia, Va. | 10 | 22 | 28 | 30.3 | 24 |
| Richmond, Va. | 8 | 23 | 27 | 18.8 | 25 |
| Roanoke: | | | | | |
| Randolph, Va. | 18 | 24 | 25 | 24.8 | 25 |
| Weldon, N. C. | 31 | 24 | 27 | 38.3 | 26 |
| Williamston, N. C. | 10 | 28 | Feb. 3 | 11.4 | 31 |
| Cape Fear: Lock No. 2, Elizabethtown, N. C. | 20 | 3 | 4 | 23.7 | 3 |
| Saluda: Pelzer, S. C. | 7 | 10 | 11 | 8.3 | 10 |
| Santee: | | | | | |
| Rimini, S. C. | 12 | 2 | 5 | 13.0 | 5 |
| | | 11 | 14 | 12.9 | 12 |
| | | 26 | 27 | 12.9 | 27 |
| Ferguson, S. C. | 12 | 13 | 17 | 12.3 | 14, 15 |
| Savannah: Ellenton, S. C. | 14 | 3 | 6 | 17.8 | 4 |
| | | 11 | 16 | 20.0 | 13 |
| EAST GULF OF MEXICO DRAINAGE | | | | | |
| Tombigbee: | | | | | |
| Lock No. 3, Ala. | 33 | Dec. 29 | 7 | 39.2 | Dec. 30 |
| | | 24 | 30 | 36.8 | 26 |
| Lock No. 1, Ala. | 31 | 1 | 7 | 31.4 | 6 |
| Pearl: | | | | | |
| Jackson, Miss. | 18 | Dec. 27 | 12 | 24.5 | 2-4 |
| | | 23 | Feb. 2 | 23.0 | 26 |
| Monticello, Miss. | 15 | 23 | 24 | 15.3 | 23 |
| Pearl River, La. | 12 | 3 | 18 | 13.6 | 7 |
| | | 26 | Feb. 5 | 13.6 | 29 |
| MISSISSIPPI SYSTEM | | | | | |
| *Upper Mississippi Basin* | | | | | |
| Illinois: | | | | | |
| Morris, Ill. | 13 | 9 | 10 | 13.05 | 9, 10 |
| Peru, Ill. | 17 | 11 | 11 | 17.1 | 11 |
| *Ohio Basin* | | | | | |
| Gauley: Summersville, W. Va. | 10 | 17 | 18 | 11.76 | 17 |
| | | 21 | 23 | 11.46 | 23 |
| New: Glenlyn, Va. | 11 | 23 | 23 | 11.4 | 23 |
| Barren: Bowling Green, Ky. | 20 | 20 | 25 | 34.4 | 23 |

*Table of flood stages in January 1935*—Continued

[All dates in January, unless otherwise specified]

| River and station | Flood stage | Above flood stages—dates From— | Above flood stages—dates To— | Crest Stage | Crest Date |
|---|---|---|---|---|---|
| MISSISSIPPI SYSTEM—continued | *Feet* | | | *Feet* | |
| *Ohio Basin*—Continued | | | | | |
| Green: | | | | | |
| Lock No. 6, Brownsville, Ky. | 28 | 20 | 27 | 43.4 | 23 |
| Lock No. 4, Woodbury, Ky. | 33 | 20 | 29 | 48.1 | 24 |
| Lock No. 2, Rumsey, Ky. | 34 | 22 | Feb. 5 | 41.6 | 30 |
| West Fork: Edwardsport, Ind. | 12 | 23 | 24 | 13.0 | 24 |
| Cumberland: | | | | | |
| Celina, Tenn. | 28 | 21 | 24 | 36.0 | 23 |
| Clarksville, Tenn. | 46 | 21 | 25 | 49.7 | 22 |
| Lock F, Eddyville, Ky. | 50 | 22 | 29 | 55.7 | 25 |
| North Fork: Mendota, Va. | 8 | 23 | 23 | 10.3 | 23 |
| Nolichucky: Embreeville, Tenn. | 8 | 9 | 9 | 10.3 | 9 |
| French Broad: | | | | | |
| Asheville, N. C. | 6 | 9 | 11 | 8.3 | 9 |
| Oldtown, Tenn. | 8 | 9 | 9 | 9.5 | 9 |
| Ohio: | | | | | |
| Dam No. 25. | 40 | 25 | 25 | 41.1 | 25 |
| Dam No. 47, Newburgh, Ind. | 35 | 28 | 30 | 35.3 | 29 |
| Evansville, Ind. | 35 | 26 | 30 | 35.8 | 29 |
| Dam No. 50, Fords Ferry, Ky. | 34 | 24 | Feb. 2 | 36.9 | 28-30 |
| *White Basin* | | | | | |
| Black: Black Rock, Ark. | 14 | 21 | 28 | 18.1 | 21 |
| White: Clarendon, Ark. | 26 | 29 | Feb. 6 | 26.3 | Feb. 3 |
| *Arkansas Basin* | | | | | |
| Petit Jean: Danville, Ark. | 20 | 20 | 24 | 24.66 | 22 |
| *Red Basin* | | | | | |
| Ouachita: | | | | | |
| Arkadelphia, Ark. | 17 | 20 | 23 | 25.62 | 21 |
| Camden, Ark. | 26 | 22 | 31 | 37.11 | 25 |
| Little: Whitecliffs, Ark. | 25 | 22 | 27 | 27.9 | 23 |
| Sulphur: | | | | | |
| Ringo Crossing, Tex. | 20 | 19 | 25 | 27.2 | 21 |
| Naples, Tex. | 22 | 22 | 31 | 30.0 | 24 |
| *Lower Mississippi Basin* | | | | | |
| Big Lake Outlet: Manila, Ark. | 10 | 3 | (1) | 16.8 | 28, 29 |
| St. Francis: | | | | | |
| Fisk, Mo. | 20 | 20 | 26 | 23.4 | 23 |
| St. Francis, Ark. | 18 | 21 | (1) | 21.7 | 26 |
| Tallahatchie: Swan Lake, Miss. | 26 | 10 | (1) | (1) | (1) |

[1] Continued into February.

# WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

(The Marine Division, W. F. McDONALD in Charge)

## NORTH ATLANTIC OCEAN, JANUARY 1935

By H. C. HUNTER

*Atmospheric pressure.*—The average pressure during January was greater than normal over most of the North Atlantic, and was especially high, compared with normal, over the northeastern area. At Valencia, Ireland, the month averaged 0.5 inch above normal pressure, or 1.05 inches higher than during the month preceding. A period of particularly high pressure over the waters adjacent to the British Isles was noted from the 15th to 22d.

The southeastern portion of the North Atlantic averaged slightly above normal in pressure, and from the 21st to the end of the month this region was almost constantly much above normal.

One considerable part of the North Atlantic, the southwestern, had pressure averaging moderately less than normal. Bermuda averaged for the month 0.07 inch lower than normal pressure, and was nearly always below during the last 9 days of the month.

The highest reading reported was 30.86 inches, by the American steamship *Collamer* during the forenoon of the 21st, at about latitude 50° N., longitude 12° W. The lowest reading was 28.45 inches, noted by the Dutch steamer *Leerdam*, very late on the 14th, at about 43° N., 62° W., near the center of a well-developed storm. These pressure extremes were from three to six tenths of an inch higher than those of the preceding month.

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, January 1935*

| Station | Average pressure | Departure | Highest | Date | Lowest | Date |
|---|---|---|---|---|---|---|
| | *Inches* | *Inch* | *Inches* | | *Inches* | |
| Julianehaab, Greenland | 29.52 | | 30.15 | 22, 25 | 28.93 | 15 |
| Reykjavik, Iceland | 29.74 | +0.28 | 30.39 | 4 | 28.74 | 9 |
| Lerwick, Shetland Islands | 30.01 | +.31 | 30.80 | 18 | 28.52 | 25 |
| Valencia, Ireland | 30.40 | +.50 | 30.83 | 21 | 29.84 | 25 |
| Lisbon, Portugal | 30.24 | +.09 | 30.47 | 12 | 30.03 | 19 |
| Madeira | 30.13 | +.03 | 30.32 | 26 | 29.94 | 10 |
| Horta, Azores | 30.23 | +.07 | 30.58 | 30 | 29.94 | 18 |
| Belle Isle, Newfoundland | 29.85 | +.05 | 30.52 | 29 | 28.88 | 3 |
| Halifax, Nova Scotia | 30.02 | +.04 | 30.72 | 5 | 28.88 | 2 |
| Nantucket | 30.10 | +.06 | 30.82 | 5 | 29.28 | 1 |
| Hatteras | 30.16 | +.02 | 30.62 | 5 | 29.61 | 23 |
| Bermuda | 30.09 | −.07 | 30.48 | 5 | 29.68 | 10 |
| Turks Island | 30.01 | −.04 | 30.11 | 20 | 29.85 | 10 |
| Key West | 30.08 | −.02 | 30.28 | 30 | 29.86 | 9 |
| New Orleans | 30.17 | +.04 | 30.53 | 24 | 29.78 | 8 |

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observation, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

*Cyclones and gales.*—The month was notably stormy in North Atlantic waters. However, only about two-thirds as many reports of gales have been received as for December 1934 while the number of reports of winds of forces 12 and 11 is only one-fifth the number for December.

The month began with one LOW centered to east-northeastward of Newfoundland and a second approaching the Atlantic coast of North America. The latter soon developed into one of the most intense Atlantic storms of the month; the forenoon of the 2d found it central near the southern part of the Gulf of St. Lawrence, as shown by chart IX. The further advance of the storm was toward southern Greenland, the intensity being still very great for about 3 days. During the night of the 2d-3d the British M. S. *Silversandal* and the American S. S. *Steel Trader* encountered winds of hurricane strength when near the 55th meridian, within the area of this storm.

From the 4th to the 10th very few vessels encountered gales anywhere in the North Atlantic; but thereafter for a fortnight a considerable number were met. Especially notable was the period from the 12th to the 15th. On the former date low pressure prevailed near the 55th meridian from southern Greenland to about the 40th parallel, with several centers indicated. By the morning of the 14th, while pressure continued low around Cape Farewell, the centers to the southward had advanced in a northeasterly direction and a new storm of great energy was central a short distance to eastward of Nantucket. On the 15th this storm was near Cape Race and still very intense, the low barometer of the *Leerdam*, already mentioned, having been observed a few hours before. This situation is indicated on chart X. On the next 2 days this storm traveled rapidly northeastward and the chief steamship routes became less subject to gales.

During the 21st and 22d a storm central between Bermuda and the Azores developed considerable strength, and the third January instance of force 12 was noted about 1 p. m. the 22d, near 34° N., 44° W., by the Italian S. S. *Valrossa*. The storm kept about the same position for several days, losing energy till it was no longer perceptible. Meanwhile another LOW had shown great strength over the waters close to the American coast. On the evening of the 22d the latter storm was central over the Carolinas, whence it moved first east-northeastward, then northeastward, to the Straits of Belle Isle by the morning of the 25th. Marked strength was shown during the 23d and 24th, and navigation near the coast was hampered not alone by high wind, but over a large area by heavy snow. In the waters between the Chesapeake capes and Delaware Bay three coal barges were sunk with loss of 13 lives.

From the 26th to the end of January there were comparatively few gales in Atlantic waters, especially of force more than 9.

Reports indicate a strong norther at and near Vera Cruz, Mexico, during the 19th and the first part of the 20th. No other notable winds were reported from the southwestern part of the Gulf of Mexico, but the eastern part experienced high winds from the 21st to 23d. In much of the Caribbean area the trade winds were reported as unusually strong from the 18th to the 21st, especially to northward of the Isthmus of Panama and thence eastward and northeastward to the 70th meridian.

*Fog.*—Except in very few areas, chiefly near to westward of Ireland, more fog was reported during January than during the preceding month. To southward of the 50th parallel several of the 5° squares in the eastern North Atlantic had more fog than is usual during January, and in particular the first 3 days of the month found widespread fog in this region.

In the Grand Banks area there was usually more than the normal January fogginess, especially near and directly to eastward of Newfoundland. The square from 45° to 50° N., 45° to 50° W., experienced fog on 9 days, chiefly near the end of the month.

Along the American coast from Nova Scotia to the Carolinas fog prevailed more frequently than is usual in January, the periods from 7th to 11th and 21st to 23d being notably foggy to northward of Hatteras. There were several collisions and groundings due to the fog of the earlier period but without serious damage. The coastal waters in the square 35° to 40° N., 75° to 80° W., furnished records of fog occurrence on 10 days during January. There was comparatively little fog in the Gulf of Mexico and the dates of occurrence there were well scattered.

## SEA SURFACE TEMPERATURE SUMMARY FOR THE EXTREME SOUTHEASTERN GULF OF MEXICO, 1912–33

By GILES SLOCUM

The area embraced in this summary comprises the three 1° squares, 23° N. to 24° N., and 84° W. to 87° W. This area lies immediately north of the Yucatan Channel.

The table shows monthly mean sea-surface temperatures, computed to whole degrees for the period 1912 to 1920, inclusive, when observations were few in number, and to one decimal place for the years 1921 to 1933, inclusive, when observations were more plentiful. As indicated in the table, no data are available for 11 scattered months, during the period covered. Interpolated values have been used for these months in computing means.

*Monthly and annual mean sea-surface temperatures in the extreme Southeastern Gulf of Mexico, 1912 to 1933, inclusive*

| Year | Total number of observations for the year | January | February | March | April | May | June | July | August | September | October | November | December | Annual [1] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1912 | 79 | 78 | 75 | 78 | 77 | 81 | 81 | 82 | 84 | 82 | 83 | 79 | 77 | 79.7 |
| 1913 | 90 | 78 | 74 | 78 | 77 | 78 | 80 | 82 | 82 | 81 | 80 | 78 | 76 | 78.8 |
| 1914 | 38 | 77 | 78 | 74 | 79 | 77 | 82 | 85 | 86 | 85 | 82 | (2) | 78 | [3] 80.2 |
| 1915 | 31 | 78 | 77 | 76 | 78 | 80 | 83 | 85 | 85 | 81 | 83 | 80 | 76 | 80.2 |
| 1916 | 18 | 79 | 76 | 80 | 77 | (2) | 84 | 82 | 83 | 83 | 82 | (2) | 77 | [3] 80.2 |
| 1917 | 24 | 75 | 77 | 77 | 78 | 77 | 81 | 80 | 82 | (2) | 82 | (2) | 74 | [3] 78.5 |
| 1918 | 14 | 75 | (2) | 78 | 78 | 81 | 82 | 83 | (2) | 83 | (2) | 80 | (2) | [3] 80.1 |
| 1919 | 30 | (2) | (2) | 78 | 78 | 80 | 81 | (2) | 86 | 81 | S1 | 81 | 78 | [3] 80.1 |
| 1920 | 76 | 76 | 74 | 79 | 80 | 80 | 82 | 82 | 83 | 83 | 80 | 79 | 78 | 79.7 |
| 1921 | 115 | 76.7 | 74.4 | 76.6 | 76.7 | 78.1 | 81.6 | 82.7 | 82.3 | 82.8 | 82.2 | 79.7 | 78.4 | 79.4 |
| 1922 | 154 | 77.3 | 77.7 | 77.3 | 77.5 | 80.6 | 81.7 | 83.2 | 83.0 | 82.6 | 80.9 | 82.0 | 77.7 | 80.1 |
| 1923 | 117 | 76.5 | 76.7 | 76.0 | 77.4 | 78.6 | 82.0 | 82.4 | 83.8 | 83.4 | 81.4 | 77.2 | 79.0 | 79.5 |
| 1924 | 116 | 76.7 | 76.2 | 77.0 | 79.1 | 80.9 | 83.4 | 84.2 | 84.6 | 84.4 | 81.8 | 76.2 | 76.8 | 80.1 |
| 1925 | 133 | 77.9 | 76.0 | 77.8 | 78.1 | 79.4 | 81.3 | 82.3 | 83.7 | 83.3 | 82.8 | 80.2 | 81.8 | 80.4 |
| 1926 | 113 | 76.5 | 76.6 | 77.1 | 79.1 | 79.0 | 81.8 | 84.6 | 84.1 | 83.5 | 82.4 | 80.8 | 80.0 | 80.5 |
| 1927 | 115 | 78.3 | 78.0 | 78.9 | 79.1 | 80.2 | 82.3 | 83.2 | 84.8 | 84.3 | 83.7 | 80.7 | 79.1 | 81.0 |
| 1928 | 141 | 77.1 | 76.8 | 77.1 | 78.1 | 78.2 | 81.5 | 82.4 | 83.5 | 82.2 | 82.9 | 80.8 | 79.6 | 80.0 |
| 1929 | 134 | 78.0 | 78.3 | 77.3 | 78.9 | 80.1 | 81.3 | 82.0 | 83.4 | 82.6 | 82.2 | 80.3 | 78.6 | 80.2 |
| 1930 | 125 | 78.1 | 77.7 | 75.7 | 77.1 | 80.7 | 81.1 | 83.5 | 84.4 | 83.9 | 82.1 | 79.7 | 78.0 | 80.2 |
| 1931 | 155 | 76.3 | 76.5 | 76.2 | 77.2 | 80.4 | 83.7 | 84.5 | 84.5 | 83.3 | 82.5 | 79.8 | 80.0 | 80.4 |
| 1932 | 101 | 79.2 | 78.6 | 76.9 | 79.1 | 79.6 | 82.2 | 84.0 | 83.5 | 83.2 | 83.0 | 80.9 | 78.2 | 80.7 |
| 1933 | 127 | 78.0 | 78.4 | 77.3 | 78.5 | 80.9 | 82.5 | 82.7 | 83.6 | 83.2 | 81.6 | 80.4 | 77.1 | 80.4 |
| Number of years' record | | 21 | 20 | 22 | 22 | 21 | 22 | 21 | 21 | 21 | 21 | 19 | 21 | 22 |
| Mean (1912–33) [1] | | 77.3 | 76.7 | 77.2 | 78.1 | 79.6 | 81.9 | 83.0 | 83.8 | 82.9 | 82.0 | 79.8 | 78.0 | [3] 80.0 |

[1] All monthly values were carried to 1 decimal place for these means, which, therefore, are not exact means of figures given here.
[2] No data.
[3] Interpolated values are used for missing months.